

CLAIMS

What is claimed is:

1 1. A switchable lightning-arrester system comprising:

2 a lightning arrester having a base end, a power-line end and a link bolt
3 positioned internally from arrester fins of the lightning arrester;

4 the link bolt having a ground end proximate the base end and a terminal
5 end proximate the power-line end;

6 an arrester-attachment base for receiving the base end of the lightning
7 arrester predeterminedly for attaching the lightning arrester to a power-line support;

8 a safety-switchable connector proximate the power-line end of the link
9 bolt for open and closed switching of electrical communication from a power line
10 to the link bolt; and

11 a ground-line connector proximate the ground end of the link bolt for
12 connecting a ground line to the line bolt.

1 2. A switchable lightning-arrester system comprising:

2 a lightning arrester having a base end, a power-line end and a link bolt
3 positioned internally from arrester fins of the lightning arrester;

4 the link bolt having a ground end proximate the base end and a terminal
5 end proximate the power-line end;

6 an arrester-attachment base for receiving the base end of the lightning
7 arrester predeterminedly for attaching the lightning arrester to a power-line support;

8 a safety-switchable connector proximate the power-line end of the link
9 bolt for open and closed switching of electrical communication from a power line
10 to the link bolt;

11 the safety-switchable connector including a counter-lever safety switch
12 having a switch platform to which the terminal end of the link bolt is attached; and
13 a ground-line connector proximate the ground end of the link bolt for
14 connecting a ground line to the line bolt.

1 **3.** The switchable lightning-arrester system of claim 2 wherein:
2 a fulcrum pillar is extended vertically upward from a pillar end of the
3 switch platform;
4 a line-support arm is attached pivotally to a support-arm axle proximate
5 a top of the fulcrum pillar;
6 the line-support arm being extended from proximate the support-lever
7 axle to a switch-rod end;
8 a power-line clamp on the switch-rod end is positioned vertically above
9 the link bolt in a closed mode of the counter-lever connector;
10 the switch rod is extended downward vertically from the line-support
11 arm for contacting the terminal end of the link bolt in a closed mode of the counter-
12 lever connector;
13 the support-arm axle is positioned horizontally on the fulcrum pillar at
14 a control-fulcrum distance upwardly from the switch platform;
15 a control lever having a control-lever handle is attached pivotally to the
16 fulcrum pillar with a control-lever axle;
17 a control-link rod has a first link-rod end attached pivotally to the line-
18 support arm with a first link axle;
19 the control-link rod has a second link-rod end attached pivotally to the
20 control lever with a second link axle;

21 the control-link rod is articulated and positioned intermediate the line-
22 support arm and the control lever for transmitting downwardly locking force on the
23 line-support arm from downward travel of the control lever and for transmitting
24 upwardly unlocking force on the line-support arm from upward travel of the control
25 lever as transmitted to the control-lever handle selectively; and

26 the control-link rod transmits a lock-shut mode of the counter-lever
27 safety switch with the switch being in contact with the terminal end of link bolt by
28 positioning of the first link axle, the second link axle and the control-lever axle in
29 a straight line for transmitting lightning power to the ground line for a use mode of
30 the lightning arrester.

1 **4.** The switchable lightning-arrester system of claim 3 wherein:

2 the control-lever handle is articulated for hand-grasping and for
3 selectively remote grasping with a control rod.

1 **5.** The switchable lightning-arrester system of claim 3 wherein:

2 the support-arm axle is positioned a predetermined distance in a
3 direction away from the pillar end of the switch platform for causing a
4 predetermined central-actuation slant of the control lever, below which opening of
5 the counter-lever safety switch with upward travel of the switch rod is prevented by
6 offsetting leverage.

1 **6.** The switchable lightning-arrester system of claim 3 and further
2 comprising:

3 an open-lock aperture articulated and positioned in the control lever for
4 receiving an open-lock pin for preventing downward travel of the control-link rod
5 and thereby preventing unintended downward actuation of the control lever.

1 **7.** The switchable lightning-arrester system of claim 3 wherein:
2 the counter-lever safety switch includes a remote actuator intermediate
3 the fulcrum pillar and the control lever for remote actuation of the control lever
4 predeterminedly.

1 **8.** The switchable lightning-arrester system of claim 7 wherein:
2 the remote actuator includes a contraction-force spring in combination
3 with the open-lock aperture that is articulated and positioned in the control lever for
4 receiving the open-lock pin for preventing downward travel of the control-link rod
5 and thereby preventing unintended downward actuation of the control lever by the
6 contraction-force spring.

1 **9.** The switchable lightning-arrester system of claim 8 wherein:
2 the open-lock pin includes a remotely accessible pin ring

1 **10.** The switchable lightning-arrester system of claim 7 wherein:
2 the remote actuator includes a remote-control motor having a linear-
3 actuation bar extended from the remote-control motor to pivotal contact with the
4 control lever for actuation of the linear-actuation bar outwardly in a direction away
5 from the fulcrum pillar for opening and inwardly in a direction towards the fulcrum
6 pillar for closing the counter-lever connector.

1 **11.** The switchable lightning-arrester system of claim 10 wherein:
2 the remote-control motor includes a wrench socket for rotation with a
3 socket wrench.

1 **12.** The switchable lightning-arrester system of claim 10 wherein:
2 the remote-control motor includes a hand knob for hand rotation.

1 **13.** The switchable lightning-arrester system of claim 10 wherein:
2 the remote-control motor includes an electrical socket for receiving
3 electrical current.

1 **14.** A switchable lightning-arrester system comprising:
2 the lightning arrester having the base end, the power-line end and the
3 link bolt positioned internally from arrester fins of the lightning arrester;
4 the link bolt having the ground end proximate the base end and the
5 terminal end proximate the power-line end;

an arrester-attachment base for receiving the base end of the lightning arrester predeterminedly for attaching the lightning arrester to the power-line support;

the safety-switchable connector proximate the power-line end of the link bolt for open and closed switching of electrical communication from the power line to the link bolt;

the safety-switchable connector including a slide safety switch having a slide platform to which the terminal end of the link bolt is attached; and

the ground-line connector proximate the ground end of the link bolt for connecting the ground line to the line bolt.

15. The switchable lightning-arrester system of claim 14 wherein:

the slide-fulcrum pillar is extended vertically upward from the pillar end of the slide platform;

the slide pillar is extended vertically upward from the slide platform intermediate the slide-fulcrum pillar and the link bolt;

the line-support platform is attached pivotally to the top of the slide pillar;

the power-line clamp is attached to the top of the line-support platform with the switch rod for holding the power line;

the slide pillar has the slide aperture for receiving the slide rod having the connection insert on the first end and the slide-rod axle on the second end;

the connection insert is articulated to contact the bottom end of the switch rod and the terminal end of the link bolt for conveying lightning current to the lightning arrester;

15 the lever-link rod is positioned intermediate the slide rod and the control
16 lever with the first end of the lever-link rod attached pivotally to the slide-rod axle
17 and the second end of the lever-link rod attached pivotally to the control lever with
18 the lever-link axle;
19 the control lever is attached pivotally to the slide-fulcrum pillar with the
20 control-lever axle; and
21 the switch rod is extended downward vertically from the line-support
22 platform for contacting the connection insert with the slide safety switch being in the
23 closed-circuit mode with the control lever oriented pivotally for sliding the slide rod
24 in opposite directions selectively.

1 **16.** The switchable lightning-arrester system of claim 15 wherein:
2 the control-lever axle is positioned predeterminedly above the slide
3 platform for allowing the control-lever to be pivoted with the control-lever handle
4 being raised above the horizontal attitude of the control lever for sliding the slide rod
5 and thereby moving the connection insert out of contact with the terminal end and
6 the switch rod for breaking circuitry of the counter-lever safety switch or optionally
7 with the control-lever handle being lowered below the horizontal attitude of the
8 control lever for sliding the slide rod and thereby moving the connection insert out
9 of contact with the terminal end and the switch rod for breaking circuitry of the
10 counter-lever safety switch with the lever-link rod having the double-end pivotal
11 contact with the slide rod and the control lever.

1 **17.** The switchable lightning-arrester system of claim 16 wherein:

2 the slide rod includes an inwardly opening length for positioning the
3 connection insert in the closed mode of the counter-lever safety switch with the
4 connection insert in electrical communication with the terminal end and the switch
5 rod by positioning of the control lever and the lever-link rod collinearly in line and
6 for positioning the connection insert inwardly towards the slide pillar by optionally
7 upward or downward pivoting of the control lever.

1 **18.** The switchable lightning-arrester system of claim 16 wherein:

2 the slide rod includes an outwardly opening length for positioning the
3 connection insert in the closed mode of the counter-lever safety switch with the
4 connection insert in electrical communication with the terminal end and the switch
5 rod by positioning of the control lever and the lever-link rod collinearly in line and
6 for positioning the connection insert outwardly in an opposite direction from the
7 slide pillar by optionally upward or downward pivoting of the control lever.

1 **19.** The switchable lightning-arrester system of claim 15 and further
2 comprising:

3 a connector-side pillar groove positioned circumferentially in an inside
4 perimeter of the slide aperture proximate the connector side of the slide pillar;

5 a lever-side pillar groove positioned circumferentially in an inside
6 perimeter of the slide aperture proximate the lever side of the slide pillar; and

7 a slide groove in an outside periphery of the slide rod.

1 **20.** The switchable lightning-arrester system of claim **19** wherein:
2 the slide groove is articulated to receive the major cross-sectional
3 portion of the toroidal resilient washer;
4 the connector-side pillar groove is articulated to receive the remaining
5 minor cross-sectional portion of the toroidal resilient washer; and
6 the lever-side pillar groove is articulated to receive the remaining minor
7 cross-sectional portion of the toroidal resilient washer for restraining travel of the
8 slide rod from optionally open and closed modes of the counter-lever connector.

1 **21.** The switchable lightning-arrester system of claim **19** wherein:
2 the slide groove is articulated to receive the minor cross-sectional
3 portion of the toroidal resilient washer;
4 the connector-side pillar groove is articulated to receive the remaining
5 major cross-sectional portion of the toroidal resilient washer; and
6 the lever-side pillar groove is articulated to receive the remaining major
7 cross-sectional portion of the toroidal resilient washer for restraining travel of the
8 slide rod from optionally open and closed modes of the counter-lever connector.

1 **22.** The switchable lightning-arrester system of claim **15** and further
2 comprising:
3 a pillar stop on the slide-fulcrum pillar articulated and positioned for
4 arresting downward travel of the control lever.

1 **23.** The switchable lightning-arrester system of claim 15 and further
2 comprising:

3 a lever stop on the control lever articulated and positioned for arresting
4 downward travel of the control lever.

1 **24.** The switchable lightning-arrester system comprising:
2 the lightning arrester having the base end, the power-line end and the
3 link bolt positioned internally from arrester fins of the lightning arrester;

4 the link bolt having the ground end proximate the base end and the
5 terminal end proximate the power-line end;

6 an arrester-attachment base for receiving the base end of the lightning
7 arrester predeterminedly for attaching the lightning arrester to the power-line
8 support;

9 the safety-switchable connector proximate the power-line end of the link
10 bolt for open and closed switching of electrical communication from the power line
11 to the link bolt;

12 the safety-switchable connector including a hinged safety switch having
13 the hinge rod proximate the base end of the arrester;

14 the hinge rod being positioned in the hinge bay on the arrester-
15 attachment base for pivoting the lightning arrester orthogonally to an axis of the
16 hinge rod;

17 the lightning arrester being pivotal interchangeably between the closed
18 mode of the hinged safety switch with the terminal end of the link bolt in electrical
19 communication with the switch rod and an open mode of the hinged safety switch

20 with the terminal end of the link bolt being removed pivotally from the electrical
21 communication with the switch rod and
22 the ground-line connector proximate the ground end of the link bolt for
23 connecting the ground line to the line bolt.

1 **25.** The switchable lightning-arrester system of claim **24** wherein:
2 the hinge bay is bifurcated in bifurcation arms extended from the
3 arrester-attachment base;
4 the terminal end of the link bolt is positioned in the handle base from
5 which the control lever having the control-lever handle is extended laterally for
6 positioning the hinge rod in and out of the hinge bay and for pivoting the lightning
7 arrester to and from the closed mode of the hinged connector; and
8 the terminal end includes the latch knob that is latched with the spring
9 latch that is extended laterally from the latch stop connector that is in electrical
10 communication with the switch rod for communicating lightning current from the
11 power line, through the switch rod, through the spring latch and into the terminal
12 end of the link bolt through the latch knob while also stopping pivotal travel of the
13 lightning arrester beyond the position of electrical connection of the latch knob with
14 the spring latch.

1 **26.** The switchable lightning-arrester system of claim **25** wherein:
2 the bifurcation arms include arcuate guides for guiding the portion of
3 the lightning arrester containing the hinge rod between the bifurcation arms while
4 the hinged safety switch is being opened and closed with the control lever.

1 **27.** The switchable lightning-arrester system of claim **25** wherein:
2 the base end of the lightning arrester has an attachable hinge-rod base
3 from which the hinge rods are extended from opposite sides.

1 **28.** The switchable lightning-arrester system of claim **25** wherein:
2 the hinged safety switch includes the support connector extended
3 intermediate the arrester-attachment base and the line-support platform.

1 **29.** The switchable lightning-arrester system comprising:
2 the lightning arrester having the base end, the power-line end and the
3 link bolt positioned internally from arrester fins of the lightning arrester;
4 the link bolt having the ground end proximate the base end and the
5 terminal end proximate the power-line end;
6 an arrester-attachment base for receiving the base end of the lightning
7 arrester predeterminedly for attaching the lightning arrester to the power-line
8 support;
9 the safety-switchable connector proximate the power-line end of the link
10 bolt for open and closed switching of electrical communication from the power line
11 to the link bolt;
12 the safety-switchable connector including the pivot safety switch
13 positioned on the power-line end of the lightning arrester;
14 the pivot safety switch having the connector base that is attached
15 detachably to the power-line end of the lightning arrester;
16 the support pillar extended orthogonally from the connector base to the
17 line-support platform;

18 the first connector boss extended predeterminedly from the connector
19 base in the direction towards the line-support platform;
20 the second connector boss extended predeterminedly from the line-
21 support platform in the direction towards the connector base;
22 the connector plug positioned removably in electrical communication
23 with the first connector boss and the second connector boss;
24 the connector plug being affixed to the pivot member that is pivotal
25 from the pivot axle on the predetermined side of the first connector boss and the
26 second connector boss for pivoting the connector plug into and out from electrical
27 communication with the first connector boss and the second connector boss
28 selectively;
29 the first connector boss being in electrical communication with the
30 terminal end of the link bolt; and
31 the second connector boss being in electrical connection with the switch
32 rod for electrical communication with the power line.

1 **30.** The switchable lightning-arrester system of claim 29 wherein:
2 the predetermined side of the first connector boss and the second
3 connector boss on which the pivot member is positioned includes the connector-base
4 side with the pivot axle positioned on the connector base for pivoting the pivot
5 member in the direction towards the lightning arrester for removing the connector
6 plug from intermediate the first connector boss and the second connector boss.

1 **31.** The switchable lightning-arrester system of claim **29** wherein:
2 the predetermined side of the first connector boss and the second
3 connector boss on which the pivot member is positioned includes the line side with
4 the pivot axle positioned on the line-support platform for pivoting the pivot member
5 in the direction opposite from the lightning arrester for removing the connector plug
6 from intermediate the first connector boss and the second connector boss.

1 **32.** The switchable lightning-arrester system of claim **29** wherein:
2 the pivot axle is in line with the an axis of the link bolt and the switch
3 rod.

1 **33.** The switchable lightning-arrester system of claim **29** wherein:
2 the connector plug includes tapered sides; and
3 the first connector boss and the second connector boss include tapered
4 ends that match taper of the tapered sides.

1 **34.** The switchable lightning-arrester system of claim **29** wherein:
2 the pivot member includes the control lever.

1 **35.** The switchable lightning-arrester system comprising:
2 the pivot safety switch attachable to the terminal end of the link bolt
3 proximate the power-line end of the lightning arrester;
4 the pivot safety switch having the connector base that is attached
5 detachably to the power-line end of the lightning arrester;

6 the support pillar extended orthogonally from the connector base to the
7 line-support platform;

8 the first connector boss extended predeterminedly from the connector
9 base in the direction towards the line-support platform;

10 the second connector boss extended predeterminedly from the line-
11 support platform in the direction towards the connector base;

12 the connector plug positioned removably in electrical communication
13 with the first connector boss and the second connector boss;

14 the connector plug being affixed to the pivot member that is pivotal
15 from the pivot axle on the predetermined side of the first connector boss and the
16 second connector boss for pivoting the connector plug into and out from electrical
17 communication with the first connector boss and the second connector boss
18 selectively;

19 the first connector boss being in electrical communication with the
20 terminal end of the link bolt; and

21 the second connector boss being in electrical connection with the
22 switch rod for electrical communication with the power line.

1 36. The switchable lightning-arrester system of claim 35 wherein:

2 the predetermined side of the first connector boss and the second
3 connector boss on which the pivot member is positioned includes the connector-base
4 side with the pivot axle positioned on the connector base for pivoting the pivot
5 member in the direction towards the lightning arrester for removing the connector
6 plug from intermediate the first connector boss and the second connector boss.

1 **37.** The switchable lightning-arrester system of claim **35** wherein:

2 the predetermined side of the first connector boss and the second
3 connector boss on which the pivot member is positioned includes the line side with
4 the pivot axle positioned on the line-support platform for pivoting the pivot member
5 in the direction opposite from the lightning arrester for removing the connector plug
6 from intermediate the first connector boss and the second connector boss.

1 **38.** The switchable lightning-arrester system of claim **29** wherein:

2 the pivot axle is in line with the an axis of the link bolt and the switch
3 rod of the lightning arrester to which the pivot safety switch is attachable.

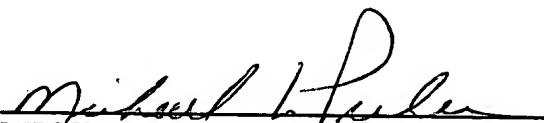
1 **39.** The switchable lightning-arrester system of claim **35** wherein:

2 the connector plug includes tapered sides; and
3 the first connector boss and the second connector boss include tapered
4 ends that match taper of the tapered sides.

1 **40.** The switchable lightning-arrester system of claim **29** wherein:

2 the pivot member includes the control lever.

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